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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,645	04/02/2004	Michael D. Pashley	US000386A	1083

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EXAMINER

NEGRON, ISMAEL

ART UNIT	PAPER NUMBER
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2875

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/816,645	Applicant(s) PASHLEY ET AL.	
	Examiner Ismael Negron	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-42 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 39-42 is/are allowed.
- 6) ☒ Claim(s) 19-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Response to Amendment

2. Applicant's amendment filed on October 18, 2006 has been entered. Claims 19, 22, 23, 26, 34, 37 and 38 have been amended. No claim has been cancelled. Claims 39-42 have been added. Claims 19-42 are still pending in this application, with claims 19, 37, 38 and 39 being independent.

Terminal Disclaimer

3. The terminal disclaimer filed on October 18, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Pat. 6,783,269 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the rod having a combination of straight and curved edges that vary in configuration along the length of the rod (as recited in Claim 33) and the a series of stripes perpendicular to the length of the rod (as recited in newly added Claim 39), must be shown or the feature(s) canceled from the claims. No new matter should be entered.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 19-30, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over MASUTANI et al. (U.S. Pat. 6,488,397) in view of HASSLER, Jr. (U.S. Pat. 4,954,931).

7. MASUTANI et al. discloses a side-emitting device having:

- **a light source (as recited in claims 19 and 38), Figure 1, reference number 3;**
- **a light transmitting rod (as recited in claims 19 and 38), Figure 1, reference number 4;**
- **the rod permitting substantially total internal reflection (as recited in claims 19 and 38), column 2, lines 60-63;**
- **a reflective outcoupling material (as recited in claims 19 and 38), Figure 2, reference number 5;**
- **the outcoupling material being affixed to the outer surface of the rod (as recited in claims 19 and 38), column 2, lines 56-59;**

- **the width of the outcoupling material controlling the angular distribution of light leaving the side of the rod (as recited in claims 19 and 38), inherent;**
- **the light source including a plurality of LED (as recited in Claim 20), column 4, lines 1-3;**
- **the plurality of LED including at least a red, a green and a blue LED (as recited in Claim 21), column 4, lines 16-18;**
- **the red, green and blue LED being mixed to generate white light (as recited in Claim 21), as evidenced by column 4, lines 12-18;**
- **the red, green and blue LEDs being mixed to generate white light chromaticity (as recited in Claim 22), as evidenced by column 4, lines 12-18;**
- **the red, green and blue LEDs being mixed to generate dynamic color effects (as recited in Claim 23), as evidenced by column 4, lines 12-18;**
- **the rod being a flexible rod (as recited in Claim 24), column 2 and 3, lines 60-67 and 1-5, respectively;**
- **the rod being a rigid rod (as recited in Claim 25), column 2 and 3, lines 60-67 and 1-5, respectively;**
- **the outcoupling material being a paint (as recited in Claim 26), column 3, line 6;**

- **the paint being white paint (as recited in Claim 27), column 3, lines 6-8;**
- **the white paint being distributed in such a way as to control the angular distribution of the light leaving the rod (as recited in Claim 28), as evidenced by column 3, lines 38-45;**
- **the white paint being distributed in such a way as to ensure uniform light distribution along the length of the rod (as recited in Claim 29), as evidenced by column 3, lines 38-45; and**
- **an elliptical rod (as recited in Claim 30), as seen in Figure 2.**

8. MASUTANI et al. discloses all the limitations of the claims, except the outcoupling material being distributed along an angular width in such a way as to ensure uniform light distribution along the length of the rod (as recited in claims 19 and 38).

9. HASSLER, Jr. discloses a side-illuminating device having:

- **a light source (as recited in claims 19 and 38), Figure 3, reference numbers 17 and 19;**
- **a light transmitting rod (as recited in claims 19 and 38), Figure 1, reference number 4;**
- **the rod permitting substantially total internal reflection (as recited in claims 19 and 38), as evidenced by column 2, lines 64-69;**

- **an outcoupling portion (as recited in claims 19 and 38), Figure 3, reference number 59;**
- **the outcoupling portion being formed on the outer surface of the rod (as recited in claims 19 and 38), column 3, lines 16-18;**
- **the width of the outcoupling portion controlling the angular distribution of light leaving the side of the rod (as recited in claims 19 and 38), inherent;**
- **the width of the outcoupling portion being determined to ensure uniform light distribution along the length of the rod (as recited in claims 19 and 38), column 3, lines 36-39.**

10. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to adjust the angular width of the outcoupling material of MASUTANI et al. to ensure uniform light distribution along the length of the rod, as per the teachings of HASSLER, Jr. (column 3, lines 36-39).

11. Method Claim 37 was considered as inherently disclosed, or at least suggested by the combined teachings of MASUTANI et al. and HASSLER, Jr. (as detailed in previous sections 7-11).

12. Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over MASUTANI et al. (U.S. Pat. 6,488,397) in view of HASSLER, Jr. (U.S. Pat. 4,954,931).

13. MASUTANI et al. and HASSLER, Jr. individually disclose, or suggest when combined (see previous sections 7-11), all the limitations of the claims, except:

- the rod being a square rod (as recited in Claim 31);
- the rod being having combination of square and curve edges (as recited in Claim 32); and
- the combination of square and curve edges varying along the length of the rod (as recited in Claim 33).

14. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to shape the rod of the device of MASUTANI et al. and HASSLER, Jr. as a square rod (as recited in Claim 31), or as a rod having combination of square and curve edges (as recited in Claim 32), such combination of edges varying along the length of the rod (as recited in Claim 33), since it has been held by the courts that a change in shape or configuration, without any criticality, is nothing more than one of numerous shapes that one of ordinary skill in the art will find obvious to provide based on the suitability for the intended final application. See *In re Dailey*, 149 USPQ 47 (CCPA 1976). In this case, one of ordinary skill in the art would have been motivated to select a specific shape as necessitated by the particular requirements of a specific application, as admitted by the applicant (see pages 5 and 6, lines 19-24 and 1-4, respectively).

15. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over MASUTANI et al. (U.S. Pat. 6,488,397) in view of HASSLER, Jr. (U.S. Pat. 4,954,931), as applied to claim 19 above, further in view of ASHALL (U.S. Pat. 5,390,436).

16. MASUTANI et al. and HASSLER, JR. individually disclose, or suggest when combined (see previous sections 7-11), all the limitations of the claims, except the outcoupling material including a combination of white paint and fine dots with varying packing density (as recited in Claim 34).

17. ASHALL discloses a side-emitting panel having:

- **a light source (as recited in Claim 19)**, Figure 1, reference number 21;
- **a light transmitting panel**, Figure 1, reference number 10;
- **the panel permitting substantially total internal reflection (as recited in Claim 19)**, as evidenced by Figure 1;
- **an outcoupling material (as recited in Claim 19)**, Figure 1, reference number 13;
- **the outcoupling material being affixed to the outer surface of the panel (as recited in Claim 19)**, column 3, lines 15-17;
- **the outcoupling material including a combination of white paint and fine dots (as recited in Claim 34)**, column 3, lines 56-59; and

- **the combination of white paint and fine dots having a varying packing density (as recited in Claim 34), column 3, lines 59 and 60.**

18. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include a combination of white paint and fine dots with varying packing density (as recited in Claim 34) as the outcoupling material of the device of MASUTANI et al. and HASSLER, Jr., to be able to enhance uniform light emission from the side of the rod, as per the teachings of ASHALL.

19. Claims 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over MASUTANI et al. (U.S. Pat. 6,488,397) in view of HASSLER, Jr. (U.S. Pat. 4,954,931), as applied to claim 19 above, further in view of REID et al. (U.S. Pat. 6,267,492).

20. MASUTANI et al. and HASSLER, Jr. individually disclose, or suggest when combined (see previous sections 7-11), all the limitations of the claims, except a mirror located at the end of the rod away from the light source (as recited in Claim 35), such mirror reflecting light that travels the entire length of the rod (as recited in Claim 36).

21. REID et al. discloses a side-emitting device having:

- **a light source (as recited in Claim 19), Figure 1, reference number 10;**

- **a light transmitting rod (as recited in Claim 19), Figure 1, reference number 20;**
- **the rod permitting substantially total internal reflection (as recited in Claim 19), column 5, lines 36-43;**
- **an outcoupling material (as recited in Claim 19), Figure 3B, reference number 226;**
- **the outcoupling material being affixed to the outer surface of the rod (as recited in Claim 19), column 6, lines 33-36; and**
- **a mirror (as recited in Claim 35), Figure 6A, reference number 626;**
- **the mirror being located at the end of the rod away from the light source (as recited in Claim 35), column 9, lines 50 and 51; and**
- **the mirror reflecting light that travels the entire length of the rod (as recited in Claim 36), column 9, lines 50-54.**

22. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include the end mirror of REID et al. in the rod of the device of MASUTANI et al. and HASSLER, Jr., to be able to reflect back along the rod light that traveled the entire length of the rod, as per the teachings of REID et al.

Allowable Subject Matter

23. Claims 39-42 are allowed.

24. The following is an examiner's statement of reasons for allowance:

Applicant teaches a side emitting illumination device having a reflective coupling material formed on an outer surface of a TIR light-transmitting rod, such outcoupling material is formed by a series of stripes extending perpendicularly to the length of the rod, and having an angular width that varies along the length of the rod, to provide substantially uniform light distribution along the length of such rod.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically a TIR light-transmitting rod including a reflective outcoupling material formed by a series of stripes extending perpendicularly to the length of the rod, and having an angular width that varies along the length of the rod, to provide substantially uniform light distribution along the length of such rod.

25. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

26. Applicant's arguments filed October 18, 2006 have been fully considered but they are not persuasive.

27. Regarding the Examiner's rejection of claims 19, 37 and 38 under 35 U.S.C. 103(a) as being unpatentable over MASUTANI et al. (U.S. Pat. 6,488,397) in view of HASSLER, Jr. (U.S. Pat. 4,954,931), the applicant argues that the cited reference fails to disclose all the features of the claimed invention, specifically a reflective outcoupling material having an angular width that varies along the length of the rod to ensure uniform light distribution. The applicant further argues that the Examiner failed to identify any teaching or suggestion in HESSLER, Jr. for adjusting the outcoupling material in MASUTANI et al. The applicant even further argues that the two references are not combinable as the outcoupling surface of HESSLER, Jr. is transmissive, as opposed to reflective (as claimed and disclosed by MASUTANI et al.), and that such outcoupling surface of HESSLER, Jr. surface is etched and not a "layer" as claimed or feature by MASUTANI et al.

28. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In this case, as detailed in previous sections 7-11, MASUTANI et al. discloses an illumination device 1 including an LED light source 3 and a side emitting rod 2, such rod further including a reflective outcoupling layer 5 formed by printing a reflecting material (e.g. white paint and a scattering agent, as suggested in column 3, lines 6-16). The reflective outcoupling layer 5 is formed with a constant angular width. HESSLER, Jr., on the other hand, discloses a rod 13 including an out coupling surface 59, such surface being formed with a varying width to produce a uniform light distribution along the length of the rod 13 (as stated in column 3, lines 36-45).

Adjusting the width of the reflective outcoupling layer 5 of MASUTANI et al. to produce a uniform light distribution along the length of the side emitting rod 2 would had been obvious to one of ordinary skill in the art at the time of invention, as taught by HESSLER, Jr.

29. In response to applicant's argument that MASUTANI et al. and HASSLER, Jr. provide no suggestion to modify the rod of MASUTANI et al. as proposed by the Examiner, the applicant is strongly advised that suggestion or motivation to modify a prior art structure can be found in a reference, or reasoned from common knowledge in the art, scientific principles, art recognized equivalents, or legal precedent. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, as previously stated, adjusting the width of the reflective outcoupling layer 5 of MASUTANI et al. to produce a uniform light distribution along the length of the side emitting rod 2 would had been obvious to one of ordinary skill in the art at the time of invention, as taught by HESSLER, Jr.

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30. In response to applicant's argument that the teachings of MASUTANI et al. and HASSLER, Jr. are not combinable, since the outcoupling surface of HESSLER, Jr. is transmissive and that of MASUTANI et al. is reflective, or that the outcoupling surface of HESSLER, Jr. is etched and not a "layer" as that of MASUTANI et al., the applicant is advised that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention is expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, as previously stated, adjusting the width of the reflective outcoupling layer 5 of MASUTANI et al. to produce a uniform light distribution along the length of the side emitting rod 2 would have been obvious to one of ordinary skill in the art at the time of invention, as taught by HESSLER, Jr.

In addition, it is noted that the claims are silent as to the reflective outcoupling material being a "layer".

31. Regarding the Examiner's rejection of claims 20-35 and 36, the applicant presents no arguments, except stating that such claims depend directly or indirectly from independent Claim 19 and would be allowable when/if the independent claim is allowed.

32. Regarding the Examiner's rejection of Claim 34 under 35 U.S.C. 103(a) as being unpatentable over MASUTANI et al. (U.S. Pat. 6,488,397) in view of HASSLER, Jr. (U.S. Pat. 4,954,931), as applied to claim 19 above, further in view of ASHALL (U.S. Pat. 5,390,466), the applicant argues that the cited reference fails to disclose all the features of the claimed invention, specifically a reflective outcoupling material including a combination of white paint and fine dots with varying packing density. The applicant further argues that the teachings of ASHALL can not be combined with MASUTANI et al. those of HASSLER, Jr., since the dots of ASHALL are transmissive and not reflective.

33. In response to applicant's argument that the teachings of MASUTANI et al. and HASSLER, Jr. are not combinable with those of ASHALL, since the dots of ASHALL are transmissive and the outcoupling material of MASUTANI et al. is reflective, the applicant is once again advised that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention is expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, as previously detailed in sections 7-11 and 16-18, MASUTANI et al. discloses an illumination device 1 including an LED light source 3 and a side emitting rod 2, such rod further including a reflective outcoupling layer 5 formed by printing a reflecting material (e.g. white paint and a scattering agent, as suggested in column 3, lines 6-16). ASHALL, on the other hand, discloses printing a

matrix 13 of dots on a surface of a side-emitting panel 10, such dot matrix 13 having a varying density for achieving a uniform light distribution along the surface of the side-emitting panel 10. Varying the density of the "dots" of MASUTANI et al. (i.e. the particles of scattering agent; see column 3, lines 6-16) of the reflective outcoupling layer 5 of MASUTANI et al. to produce a uniform light distribution along the length of the side emitting rod 2 would have been obvious to one of ordinary skill in the art at the time of invention, as taught by ASHALL.

Conclusion

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached on (571) 272-2378. The facsimile machine number for the Art Group is (571) 273-8300.

35. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you

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have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.



Ismael Negrón
Examiner
AU 2875